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ABSTRACT

This is a report of the first national exhibition and conference on multilingual word processing in voluntary organizations and community groups held in London, England in June 1988. The keynote speech of the conference, "Why Multi-ethnic Systems Matter" and a speech entitled "What Users and Manufacturers Should Be Talking About" are included in the report, as well as a summary of the conference and exhibition. Feedback and evaluation by participants about the conference are also provided. Appended materials include lists of conference exhibitors and participating organizations, and an article, reproduced from a newsletter, on multilingual word processing. (VWL)

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# Multi-lingual Word Processing and Voluntary Organisations

## report of a conference

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20 June 1988

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## Community Information Project

# Multi-lingual Word Processing and Voluntary Organisations

## report of a conference

by

**Sally Burke**

and

**Paul Ticher**

with contributions from Tony Baldwinson (Greater Manchester Council for Voluntary Service) and Marian Shapiro (National Council for Voluntary Organisations)

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# Introduction

This is a report of the first ever national exhibition and conference on multi-lingual word processing in voluntary organisations and community groups, held in London in June 1988.

Interest in word processing in languages other than English and scripts other than 'Roman' has been growing rapidly in Britain. The Community Information Project organised the event because of the large number of enquiries we were receiving, from voluntary organisations all over the country.

As computer use becomes widespread, voluntary organisations need access to high quality technology for producing materials not just in English, but in all the languages used by the communities they serve and live in.

They need access to word processing packages designed or adapted specifically for each language. The packages should incorporate the ease of use and powerful features that are now part and parcel of modern European and American software. There should be keyboards corresponding precisely to the script in use or, as a minimum requirement, good quality, durable 'overlays' to place over a European keyboard. Users also need screen displays and printers that can reproduce all the necessary characters, to an acceptably high standard. Finally the screen instructions and manuals should be available in the language of choice, preferably with English as a second option.

**'Market forces'**

English (or 'Roman') scripts dominate computing. All too many manufacturers are unwilling to develop systems in different languages. They think the market is too small; a 'minority'.

Despite these difficulties, an encouraging number of multi-lingual word processing packages have been developed over the last few years, but information on them has been scattered, and difficult to come by.

An article in *Computanews* * in 1987 highlighted the lack of co-ordinated information on multi-lingual word processing, and listed some of the systems that were around. Since then the Community Information Project have collected information on other systems. While organising this conference we have learnt of many more.

**Tackling the problems**

By bringing together producers of systems and those interested in using multi-lingual word processing, participants could see what was on the market. They could try out a wide range of systems - often for the first time. Exhibitors could receive feedback on the strengths and weaknesses of their systems. And, perhaps, those exhibitors with responsibility for developing and marketing the packages would come away convinced of the very real demand for multi-lingual word processing.

Word processing, or course, is just the start. While it undoubtedly represents the biggest single area of need, database programs are also required. The lack of voiced demand for them is due more to people's (realistic) expectations, than to an absence of the need.

** 'Multi-Lingual Word Processing. Computanews. issue 30. June/July 1987. (Reproduced in Appendix 3.)*

# On the day

**A summary**

Some 200 delegates attended the event. They came from a wide range of voluntary organisations as well as local authorities, libraries and academic institutions.

*Addresses of those organisations who sent delegates are listed in Appendix 2, grouped geographically.*

**The exhibition**

The exhibition was held in the morning. Some of the products had been on the market for a year or more. Some were being shown to the British public for the first time. Others, still under development, were demonstration versions only.

The systems covered an enormous range. The North Indian languages predominated, but Arabic and Chinese were well represented, with Khmer, Lao, Malay, Sinhalese, Syriac, Tamil, Thai and Vietnamese on offer. Cyrillic, Greek, Hebrew, Russian and Turkish also appeared in the exhibitors' lists, as did French, German, Spanish and Welsh.

*Full details of the exhibitors and their products appear in Appendix 1.*

**The conference**

The conference took place in the afternoon, and was chaired by Conway Mothobi of ITEC 6502 (Moss Side, Manchester). The keynote speaker, Nirveen Kalsi of Haringey Health Authority, described why multilingual systems matter, then John Clews of the British Library Documentation Centre set out what users and manufacturers should be talking about.

*The speeches are reproduced on pages 3 and 5.*

Participants then divided into groups for discussion. A speaker from each group reported back to the main meeting with views on the exhibition and on what should happen next. They also put questions to a panel of system developers.

*The main points that arose from these discussions are described on page 7. Participants' responses to the conference are summarised, followed by an analysis of what people were interested in - and what should happen next.*

# Why multi-ethnic systems matter

*Keynote speech by Nirveen Kalsi, Haringey Health Authority*

If organisations are to be effective, they need to be able to communicate effectively with all staff, clients and customers. If an organisation is not able to communicate effectively, it will unwittingly deny, or prevent, services from being equally available and effectively used. This does not only apply to local authorities, or voluntary organisations, but also to private industry.

So why do multi-ethnic systems matter? Let's start with the statistics.

**Surveys**

The Policy Studies Institute (PSI) carried out its third survey into the circumstances of British black people in 1982. They found that the proportion of adults who aren't fluent in English varied between linguistic minority communities; between age groups; between men and women.

The PSI survey found that, within the adult Asian population, 60 per cent of Bangladeshis and 48 per cent of Pakistanis speak little or no English, compared with only 28 per cent of Indians and 18 per cent of East African Asians.

The Linguistic Minorities Project surveyed 11 minority languages communities in Bradford, Coventry and London and found similar variations. Over 70 per cent of Polish, Turkish, Gujarati and Greek speakers understand and speak English well, compared with less than 50 per cent of Chinese, Bengali and Pakistani / Punjabi speakers.

Fluency in English is more closely related to age than to length of settlement in Britain. The PSI survey found that more than half the Asian adults over 55 speak little or no English, compared with a quarter of adults under 35.

**Women and language**

Within all age groups, women are on the whole less fluent in English than men. Over 70 per cent of the Bangladeshi and Pakistani women in the PSI study speak little or no English. The Linguistic Minority Project survey found that Bengali, Gujarati, Punjabi, Italian, Greek and Turkish women are less fluent in English than men.

**Literacy in mother tongue**

The majority of people whose first language is not English can read and write in their own mother tongue. But, again, a majority cannot read or write English.

The Linguistic Minority Project survey found that, in a large number of cases, literacy in English was lower than in the mother tongue. Less than 50 per cent of respondents could write English well, but in most communities at least 50 per cent of adults can read or write their first language 'fairly well' or very well. Literacy in the mother tongue ranged from over 80 per cent among Polish and Ukranian respondents to 47 per cent among Pakistani / Punjabi speakers in Bradford.

A survey carried out in Bristol by S. Fenton of the health and welfare needs of middle aged and elderly Asians and Afro-Caribbeans found that a number of Afro-Caribbeans reported difficulties with some aspects of written English.

These findings have practical implications for written communications in all fields. Understanding written information, filling out forms and following written health and safety advice can present serious difficulties for some black and ethnic minority people. It is necessary to find other mediums, as well as English, to convey information.

**Why multi-ethnic systems?**

Because people might not speak, read or understand English. They will need to pass on information. Information is often needed for safety reasons. And information is power - we use it, and language, to help us to make informed choices. If we believe in Britain really being a multi-racial society, we must acknowledge every person's needs - not thinking of needs as 'special' but recognising the differences as justified, and to be prioritised equally.

We must employ and work with people who speak other languages, in order to overcome the problems of finding translators. We must print information in many different languages, distributing it widely and bringing in a wider audience.

Multi-lingual word processing systems can help to produce well presented, good quality information. Computers are used more and more to produce good quality text in English, but all too often material in other languages is handwritten, and often shoddy. What does that say about the organisation?

**Cultural arrogance**

Initially, many people didn't want to produce materials in other languages because of the idea of assimilation. And technology was not available. And there was cultural arrogance; the view that 'they can't read in their own language, so why bother?'

We must acknowledge that Britain is a multi-racial society. Technology exists - so who is going to use it? We must: to reach as wide an audience as possible. We must use it in a wide range of languages, and produce good quality material.

# What users and manufacturers should be talking about

*Speech by John Clews, British Library Documentation Centre*

I am here today wearing various hats:

- as one of several British Library staff investigating the automation of scripts in different languages;
- as a personal computer user;
- as a consultant working for manufacturers and/or software developers on Asian script development on computers;
- as a committee member of a British Standards Institution Technical Committee and an International Standards Organisation working group; as editor of SESAME BULLETIN, which deals with non-Roman scripts and extended Roman scripts on computers.

I shall look at what users need from manufacturers, and what manufacturers need to know from users.

Because they operate according to commercial criteria, manufacturers (I am including software suppliers in this term) need to be sure there is a reasonable market for any specialist needs before they embark on development. If you go to a computer exhibition and ask any manufacturer what equipment or software they have which will allow processing in any Asian script, most will still give you a blank stare of incomprehension. They are mainly interested in selling standard hardware or software according to the standard requirements of the consumer.

Because the bulk of these standard packages were available only in English, or in Western European languages, most early developments in Asian script computing were in university departments or other institutions with specific needs. More recently there have been some commercial ventures, but these have been largely small scale. The mainstream computer manufacturers have, with a few notable exceptions, largely ignored Asian script needs in favour of their standard products.

As users of specific languages or scripts, we need to make sure that manufacturers sell us products that can combine specific consonants or vowels together (as in most South Asian and South East Asian scripts) or to print from right to left (for scripts of a Middle Eastern origin) or sometimes vertically (for Far Eastern scripts). Ideally this needs to be done both on the printer **and** on the screen, and the ability to use special keyboards is also a requirement.

We can develop or adapt computer systems to our own specific needs if we have enough technical knowledge. But we are then unable to use data from other systems which have not been adapted in the same way. Instead, we need to get our own special language needs supplied as standard by manufacturers.

**Manufacturers need standards**

How do we influence manufacturers to produce what we want in terms of Asian script capability? We must specify the standards they should adopt.

Some standards arise through market forces, such as the IBM PC, 5 1/4 or 3 1/2 inch disks, or operating systems like CP/M or MS/DOS. There are also technical standards agreed co-operatively by manufacturers - the RS232 interface, for example.

The main needs are to define standards for character sets, so that text can be interchanged between different users and different systems, and for keyboard layout.

The most important body for computer standards is Technical Committee 2 of the International Organisation for Standards (ISO). This sub-committee deals with character set standards. It ensured that ASCII ** (or a national variant) was accepted worldwide as an international standard (ISO 646). It has also been concerned with standardising character sets for other scripts such as Greek, Russian, Arabic, Japanese and Chinese.

Unfortunately hardly any developing countries have asked for representation on this ISO committee, so it is very difficult for manufacturers to find details of which character code they should use. In particular India, Pakistan, Sri Lanka and Bangladesh are not represented.

This obviously has implications for developing standard character sets for UK minorities. South and South East Asian languages (such as Urdu, Hindi, Thai or Lao) could fit into standards that the ISO committee is developing. But it is difficult to get information on any standard codes being used in India, Pakistan, Sri Lanka or Bangladesh. Japan, Korea, China and Taiwan all have national standard codes - while each is compatible with ASCII, none are compatible with each other.

**What of the future?**

How will developments affect us at the local level?

It is important that local contact between people with similar needs is carried on. Many of you will have made useful contacts today with people sharing the same problem - and perhaps even solving the same problem.

This conference and exhibition is the first in Britain devoted to multi- script computing. It forms a milestone in this area. Milestones in English country lanes are now fairly rare, often overgrown and are something of a monument to the past. They have largely been supplanted by signposts, which also point in the direction you want to take.

I hope this conference will be a signpost as well as a milestone, pointing to useful developments in the future. These might include future events like today's conference, or the formation of local groups dealing with multi- script computing. As an information provider, I would be glad to carry details of future developments in SESAME Bulletin. The more we can work together, the more we can solve common problems. To coin a phrase now common in telecommunications - we should be talking to each other.

**John Clews has recently completed a British Library R & D report on character set standardisation, "Language Automation Worldwide". This is available from SESAME Computer Projects, 8 Avenue Road, Harrogate, North Yorks HG2 7PG.**

** *American Standard Code for Information Interchange*

# Feedback

Participants divided into discussion groups after the speeches. The groups were asked to give feedback on the conference and exhibition and decide on questions to ask the technical panel of systems developers.

**Views**

Speakers generally welcomed the conference. It was particularly useful in bringing people with common needs together. Many people had not realised this amount of work was going on, and were pleased to see so many multi- lingual word processing systems around, and so much potential for further development.

However, it was felt that a lot of the systems were difficult to assess for 'non technical' people. It was also suggested that a five to ten minute presentation by each exhibitor would have been an improvement. It would have prevented congestion in the exhibition space and avoided the need for each exhibitor having to repeat the same demonstration over and over again to a single person.

Numerous participants skilled in particular languages thought that the software on display was fairly crude. They felt that a lot of work was needed to make them as 'user friendly' as software that is developed for the 'mainstream' market.

Potential users who are fluent in that particular language should be involved in developing and updating systems as well as technical specialists. This view was put forward time and time again; people found that some scripts were good but the word processing facilities were clumsy, while others liked the word processing facilities of particular packages but were unhappy with the quality and accuracy of the actual scripts. The importance of well produced, clearly written manuals in each language was also stressed.

One point raised in discussion was the instability of the market place - which works so strongly against the needs expressed above. More and more multi-lingual computer systems are being developed, but most are manufactured by small companies. Changes in personnel or in the status of a company could lead to software and hardware being suddenly withdrawn. To quote only Chinese examples, this happened to the Ferranti Scholar and (apparently) the Feima package for the Apple Macintosh.

Manufacturers should also ensure that packages are compatible with different systems. Many of those on display only ran on one or two types of computer. Many were not 'IBM compatible'. For example, Locomotive Software have developed low cost word processing packages in a range of languages at a very reasonable price. They only run on the Amstrad PCW 8000 series. If large suppliers such as Amstrad, IBM, Honeywell or Wang followed Locomotive's example and invested in multi-lingual word processing it would be most beneficial.

**Links with other countries**

The call by John Clews for standardisation of character sets and keyboard layouts was backed up by several people. The panel was also asked whether they knew of links with people working on systems in other countries where specific languages are widely spoken. It seemed that there were good contacts with developers in the Far East. But very few

links, if any, existed between computer manufacturers in Britain and those in India, Pakistan, Bangladesh and Sri Lanka.

One member of the panel alleged that nothing was being developed in India; that everything was 'pirated'. But the main concern, shared by panel members and participants, was that South Asian language word processing in the Indian sub continent and in Britain would proceed in different and unco- ordinated directions unless effective links were established soon. Perhaps this could be done by specific organisations with technical connections in both Britain and the countries in question - India, in particular. One participant suggested that the proposed University of the Commonwealth could take this up. Another suggested the International Development Research Centre (based in Ottawa but with a South Asian regional office in Delhi).

**The future**

Groups were asked, when reporting back, to give their views on what should happen next.

Many felt that the most important thing was to establish a network, so that resources could be shared and packages independently evaluated. Working groups or panels should be established, made up of users fluent in each language and those involved in the technical side. A 'pool' of experts in Asian languages to advise on the quality of languages and scripts on offer would be particularly welcome.

There were also calls for a central database or directory, with information on the available systems and on organisations with experience of particular packages. A good mailing network is needed, so information on new developments can be circulated rapidly.

There is also a need to lobby manufacturers. However small the market (and it's probably not as small as they think) they should continually be made aware of the need to develop more and better software.

# Evaluation

## Participants' Interests

The conference booking form asked people which languages / scripts, and which hardware, interested them most. Fifty of these responses were analysed. The results (which are in no way from a controlled survey) are as follows:

**Languages - number of people interested**

| | | | |
|---|---|---|---|
| 'Asian languages' (undifferentiated) | 5 | | |
| Urdu | 23 | 'African languages' | 1 |
| Punjabi | 19 | | |
| Bengali | 18 | Amharic | 2 |
| Gujarati | 15 | Tigrinya | 2 |
| Hindi | 15 | | |
| Tamil | 6 | Turkish | 7 |
| Malayalam | 2 | Greek | 5 |
| Sinhalese | 1 | Polish | 2 |
| | | Armenian | 1 |
| Chinese | 10 | Croatian | 1 |
| Vietnamese | 6 | Cyrillic | 1 |
| Japanese | 2 | Russian | 1 |
| | | Serbian | 1 |
| Arabic | 6 | | |
| Farsi | 3 | 'Western European' | 4 |
| Hebrew | 1 | | |
| Kurdish | 1 | | |

Most respondents mentioned more than one language, though quite a few specified no particular interest at all.

**Hardware - number of people interested**

| | |
|---|---|
| PC compatibles (desktop) | 25 |
| Apple Macintosh | 7 |
| Amstrad PCW | 4 |
| BBC 'B' and/or 'Master' | 4 |
| Apricot (non-PC compatible) | 2 |
| Portable PC compatible | 2 |
| Nimbus | 1 |

## Participants' views

An evaluation form was included in the conference pack. Participants were asked to hand it in on the day or send it later. Thirty two forms were returned.

Twenty six indicated they found the conference and the exhibition useful. Just one said the conference was not useful; another that the exhibition was not useful. One said the event was '50 per cent' useful, another 'to some extent'; another 'up to a point'.

Participants were asked if they had seen a product that might meet their needs. Fifteen answered yes; seven answered no. One was not sure; the others did not say.

The form asked those who had replied 'no' to state what they needed:

*'A complete word processor / keyboard with software to print English, Tamil and Sinhalese simultaneously with letter formation as in print, following linguistic traditions.'*

*'A way of telling good non-English word processing products from less good ones'.*

*'A user group, regular magazine, etc which caters for different sorts of users (eg casual users who use several different languages); a method of evaluating whether software is appropriate to our particular needs.'*

*'Liaison with the country of origin.'*

*'Systems which will do more to support translation by people who speak and read a little ... Asian language equivalents of any serious WP would be a good start.'*

*'A cheap simple system for word processing in the following languages: Bengali, Gujarati, Urdu, Chinese, Vietnamese, Turkish, Spanish, Portuguese, Polish'.*

*'Would need to have a local translator's opinion and work the equipment fully before deciding on a particular package.'*

The form asked how the event could have been improved. Below are some of the respondents' suggestions.

*'Although the exhibition and conference added a lot to my knowledge about progress made in other languages, not enough has been done by software developers in terms of translations; eg manipulating language dictionaries.'*

*'I was not really able to get clear information about the systems offered. I think the suggestion that each manufacturer could have given an introduction to their product was good. The other problem was that in the discussion groups people with technical expertise were talking to each other over the heads of people like me with limited knowledge.'*

*'More formal presentation of packages, so those who didn't understand the language could have had some idea of what was happening and why.'*

*'I felt the panel was often rather negative in their response to the conference discussion. A panel more involved in the conference as a whole and / or more representative (not just manufacturers?) would help.'*

*'Most of the products were prematurely exhibited.'*

*'People needed a much fuller opportunity to explore and define their needs and then to discuss these systematically with developers.'*

*'Very good and informative effort - hope there will be more conferences like this in the near future.'*

*'More machines, more space so more chance to try things out.'*

*'Different venues every time to publicise the project more (venues in different parts of the country?)'*

*'I congratulate the organisers for this very useful conference. I have benefited much from the contacts. As it was suggested by the groups there should be more positive co-operation with host countries of these languages. There were some unsympathetic comments made by some members of the panel on this question. This is very sad indeed. I shall be watching the development in this field with keen interest.'*

And - for the future?

*'To be satisfied with word processing is not enough. The more I think about it, the more I realise how useful data-manipulating programmes would be to voluntary organisations for various ethnic minorities. It would enable people not 100 per cent familiar with English to become involved to a greater extent, not merely as consumers of information and services, but as organisers and providers thereof.'*

# A view from the chair

Conway Mothobi, ITEC 6502 (Moss Side, Manchester)

**Some concerns**

There is an almost tangible mismatch between the needs and aspirations of non English speaking users and potential users on the one hand, and the product policies of the dealers and suppliers on the other.

Also, manufacturers and dealers don't appear to have taken the requirements of developing countries into consideration.

New technology course design and research design in the UK would appear to be oblivious to the above concerns.

**Some possible ways forward**

The conference should become a Standing Conference that would:

- seek to positively match products to the real needs and aspirations of the potential users, and
- encourage both UK students and students from developing countries to press their respective national policy makers to prepare an information technology plan as an integral part of socio-economic developments, and to organise themselves into effective national scientific communities, to determine their own standards of relevance and excellence, and to be known and respected for these standards.

# What next?

So much should happen. The event was the first of its kind - and the first time that a large number of multi-lingual word processing packages had been displayed in the same place. The conference did much to to highlight the lack of co-ordination in so many areas: developments in other countries; between different types of hardware; between developers and those skilled in the particular languages; between those in different voluntary organisations using or interested in using multi-lingual word processing.

**A network**

The most common call was for the setting up of a network to share resources and evaluate packages. This network could incorporate panels or working groups so that those skilled in the technical aspects of systems development could work with those fluent in particular languages; so that 'pools' of experts could advise on the quality of languages and scripts on offer.

There were demands for a central directory of systems on the market and of organisations using particular packages. There were also calls for the need to lobby manufacturers to develop more and better software. Some people asked for more conferences - perhaps in different areas of the country.

**Local consortia**

One attractive idea for future action was the forming of local consortia, to pool resources and share multi-lingual word processing facilities.

Jaswant Singh of South Riverside Community Development Centre in Cardiff (who is also a member of CIP's management committee) is already putting this into practice:

> *'The conference happened at a very good time. If multi-lingual word processing is used to produce clear, good quality material in different languages, lots of people from different communities will be able to benefit.*
>
> *I am pulling together a consortium of local organisations - both voluntary organisations and statutory agencies (including social services and housing departments). About thirty organisations have already expressed interest.*
>
> *We plan to put in £100 each and purchase a computer (either an Amstrad PC or an Atari) and a word processing package with a wide range of Asian languages (from one of the exhibitors at the conference). We plan to add Chinese, Arabic, Greek and Vietnamese in the future. The more organisations come in, the more languages we can add.*
>
> *We'll contact computer firms for the most competitive quotes for the hardware. We also plan to approach both the council and local industry for funds.'*

Others should follow this example. As well as using multi-lingual word processing to benefit those they are working with, local consortia of voluntary organisations could do much to convince sceptical manufacturers that there really is a 'viable market' for packages in lots of different languages. And the expertise acquired by consortia would do much to build firm foundations of a really effective nationwide network.

**Software 'loans'**

A possibly useful base for the 'local consortia' model would be local development agencies such as resource centres and community relations councils. Such organisations would need some additional resources to make equipment available to user groups, given overheads and the turnover of new users requiring training.

Oldham Resource and Information Centre is an example of user groups using centre-based technology equipment for low cost word processing in English.

Such a network of hardware and resource centres could be complemented by a software 'loan' system provided to network members. There is a danger that a lot of money is spent initially on two or three programs - and then the user groups change or the programs are substantially improved. The local consortia would then find it difficult to maintain interest without fresh capital funds. A software library would allow trial periods to evaluate products locally as well as access to updates and improvements.

**How?**

Networks; directories; consortia; panels of language specialists; facilities for independent evaluation. They are certainly needed. But who is going to set them up? And who has the resources?

If these suggestions are ever to be put into practice, a lot of work will be needed by a lot of people. If you are interested in developing this work and are able to offer practical help and suggestions, the Community Information Project would like to hear from you. Let us know what you can do.

*We intend to cover whatever develops in the future in Computanews, our bi- monthly newsletter. If you are interested in subscribing to this, contact Sally Burke for a sample copy at Community Information Project, Universal House, 88-94 Wentworth Street, London E1.*

## Appendix 1

# List of Exhibitors

**Gate Seven Computers**

6a Gwendwr Road, London W14 9BG. Tel: 01-602 5186
*Exhibiting:* **Signum II Word Processor with Gate Seven Fonts**
*Suitable for:* Atari ST computer with 1 Megabyte memory
Epson 9-pin, NEC 24-pin, Atari & other laser printers
*Languages/scripts:* European Roman, Greek, Cyrillic, Hebrew, Devanagari, Bengali, Gujarati, Punjabi, Urdu, possibly others.
*Cost:* £184 for Signum II, £30 to write left to right; £25 per language

**ILECC**

(Inner London Education Computer Centre), John Ruskin Street, London SE5 0PQ
Tel: 01-735 9123
*Exhibiting:* **Allwrite**
*Suitable for*: RM Nimbus computer, Epson or compatible printer
*Languages/scripts:* Bengali, English, Greek, Gujarati, Hindi, Turkish, Urdu
*Cost:* About £25

**Leabus Ltd**

92 Stratford Road, Birmingham B11 1AN. Tel: 021-554 1150
021-771 0601 / 0606
*Exhibiting:* **Word-Bird PTS**
*Suitable for*: IBM PC/XT/AT compatibles, Apricot PC
9-pin, 24-pin, laser and ink-jet printers
*Languages/scripts:* Bengali, Gujarati, Hindi, Punjabi, Urdu (Nastaliq), Greek, Arabic, Hebrew, Syriac, Vietnamese, Turkish, Persian (Nask & Nastaliq), Malay, any other on request
*Cost:* from £99

**Cultural Partnerships**

90 de Beauvoir Road, London N1 4EN. Tel: 01-254 8217
*Exhibiting:* **Font design service**
*Suitable for:* Design carried out on Apple Macintosh; Fonts can be used on any "Postscript" compatible system.
*Languages/scripts:* Bengali on display. Any other possible.
*Cost:* Negotiable

**Mark Davies**

Qalam, 19 Oriel Mount, Oriel Road, Fulwood, Sheffield S10 3TF.
Tel: (0742) 304486
*Exhibiting:* **Qalam**
*Suitable for:* Amstrad CPC6128 with Amstrad DMP printer
*Languages/scripts:* Gujarati and other South Indian Devanagari-based scripts
*Cost:* not yet on the market

**Dragon & Phoenix Ltd**

15 - 18 White Lion Street, London N1 9PD. Tel: 01-837 8251
*Exhibiting:* **Brushwriter**
*Suitable for:* PC-AT compatibles
Epson, HP Laserjet & about 40 other printers
*Languages/scripts:* Chinese (full form and simplified)
*Cost:* £840 (including extension memory)

**Tedimen Software & Brent Language Service, THATT Services, Pathway Community Computing Project**

Tedimen Software, P O Box 23, Southampton, Hants SO9 7BD.
Tel: (0703) 473774
*Exhibiting:* **Modern Language Folio**
*Suitable for*: BBC Model 'B', BBC 'Master'
Epson compatible printers
*Languages/scripts:* Punjabi, Hindi, Gujarati, Bengali, French, German, Spanish, Welsh. Other character sets can be defined.
*Cost:* Asian versions £30 + VAT, European versions £25 + VAT

**Locomotive Software**

Allen Court, Dorking, Surrey RH4 1YL. Tel: (0306) 740606
*Exhibiting:* **Locoscript 2**
*Suitable for:* Amstrad PCW 8512 computer & printer
*Languages/scripts:* All European scripts including Cyrillic & modern Greek, Arabic, Urdu (under development)
*Cost:* £24.95 inc VAT (European); £59.95 inc VAT (European, Arabic & Urdu)

**Megachomp Company**

3524 Cottman Avenue, Philadelphia, PA 19149 - 1606, USA.
Tel: (215) 331-2748/8138
(demonstration by Greater Manchester Council for Voluntary Service)
*Exhibiting:* **Duangjan**
*Suitable for:* IBM PC/XT/AT & System/2 compatible computer
Range of dot matrix and laser printers
*Languages/scripts:* Armenian, Bengali, Burmese, European, Greek, Gujarati, Hindi, Khmer, Lao, Punjabi, Russian, Sinhalese, Tamil, Thai, Vietnamese
*Cost:* $109.00 plus shipping

**Chinese Information Centre Cooperative**

1st floor, 16 Nicholas Street, Manchester M1 4EJ. Tel: 061-228 0420
*Exhibiting:* **RIPST** and **YAMO**
*Suitable for:* PC-AT compatible computer
dot matrix or laser (HP laserjet compatible) printer
*Languages/scripts:* Chinese (full form and simplified)
*Cost:* RIPST £2449; YAMO £990 - £10,200

**2020 Technology**

5 Glasshouse Walk, London SE11 5ES. Tel: 01-793 0005/6
*Exhibiting:* **Multilingual Scholar**
*Suitable for:* PC compatible with hard disc
9-pin, 24-pin and laser (HP Laserjet or JLaser) printers
*Languages/scripts:* Bengali, Gujarati, Gurmurkhi, Tamil, Devanagari, Korean, Sanskrit, Telugu, Thai, Urdu, Arabic, Vietnamese
(Also Armenian, Amharic, Aramaic, Coptic, Phoenician, Ugaritic)
*Cost:* £350 basic, plus £150 for laser driver, plus £195 per font for dot matrix, £295 for laser versions

**Micropraxis**

1 Victoria Street, Sheffield S3 7QB. Tel: (0742) 739982
*Exhibiting:* **Urdu Writer**
*Suitable for:* Atari 1040 STF, BBC 'B' with 40/80 track disc drive
any dot matrix printer
*Languages/scripts:* Urdu, plus other planned
*Cost:* Atari: £345 (educational discount 50%) BBC: £46 (disc) £97.75 (ROM)

**Intex Systems (UK) Ltd**

Media House, 6 Knolls Way, Clifton, Beds SG17 5QZ. Tel: (0462) 811817
*Exhibiting:* **Intext Multilingual Software**
*Suitable for:* PC or AT compatible computer
numerous printers
*Languages/scripts*: 41 in total, including Arabic, Russian, Hebrew, French, German
*Cost:* £199 plus (educational discounts)

**International Computer Supplies**

1 Court Place Gardens, Iffley, Oxford OX4 4EW. Tel: (0865) 717168
*Exhibiting:* **Multi-lingual ChiWriter**
*Suitable for:* PC compatibles (no hard disc needed)
9-pin & 24-pin dot matrix and laser printers
*Languages/scripts:* Hindi, Marathi, Sanskrit, Vedic, Nepali, Punjabi, modern & ancient Greek, Hebrew, Arabic, Russian, Ethiopian, Japanese (Katakana). Others available soon.
*Cost:* from £68 + VAT

## Other developments: The Asian Scripts Project

The City of Bradford Council has developed a word processing system in Urdu, initially through their Asian Scripts Project. It runs on the Apricot XEN. The council is planning to release it to other local authorities, and possibly voluntary organisations, at a cost of around £250 (including initial training). Systems in Bengali, Hindi and Gujarati, all running on MacWrite (Apple MacIntosh), may be released in the future.

For further information contact David Atkinson, Computer Division, City of Bradford Metropolitan Council, Britannia House, Hall Ings, Bradford BD1 1HX (tel: 0274 752892).

## Additional material

Other information available at the exhibition included:

**Arabits**

A newsletter on word processing in Arabic and related topics. Published by AWM Graphics (a division of the missionary society Arab World Ministries), Garcia Estate, Canterbury Road, Worthing, West Sussex BN13 1AL. Tel: 0903 68713.

**Micro Facilities**

Leaflets on Indian word processing (with laser printing) in Gujerati, Hindi, Tamil, Sinhalese, Bengali, Punjabi. Micro Facilities Ltd, Central House, High Street, Hampton Hill, Middlesex. Tel: 01 943 3922

**Vuman Computer Systems**

Information on 'Vuwriter Language Master': word processing in many European languages and Greek and Russian (Cyrillic). Produced in association with the University of Manchester. Vuman Computer Systems Ltd, Enterprise House, Manchester Science Park, Lloyd Street North, Manchester M15 4EN. Tel: 061 226 8311

**Manna Publications**

Details of a laser typesetting service in five Asian Languages:

Gujarati, Hindi, Punjabi, Bengali & Urdu. Manna Publications, Manna Building, 16 Mandora Lane (off Mill Hill Lane), Leicester LE2 1AG. Tel: 0533 542794

## Appendix 2

# Organisations Attending

**Listed by area:**

**East Anglia**
**London**
**Midlands**
**North East**
**North West**
**South East**
**South West**
**Wales**
**Yorkshire**

### EAST ANGLIA

Museum Documentation Association
Building 0, 37 Cherry Hinton Road, Cambridge, Cambridgeshire, CB1 4DH

### LONDON

Barking CAB
Axe Street, Barking, Essex

Brent Community Law Centre
190 High Road, Willesden, London, NW10

Central Computer Service (LRB)
Room 448a cc/pa/1/ts, The County Hall, York Road, London, SE1 7PB

Centre for Armenian Information & Advice
Room 4, Capital House, Market Place, Acton, London, W3

Centre for Bilingualism
High Cross Education Centre, High Road, Tottenham, London, N17 6QP

Croydon Guild for Voluntary Organisations
78 Thornton Road, Thornton Heath, Croydon, CR4 6BA

Croydon Translating Co-operative
34A Station Road, West Croydon, London CR0 2RB

DSJ Print
156 Cambridge Road, Seven Kings, Ilford, Essex, IG3 8LZ

Garnett College
32 Whitford Gardens, Mitcham, Surrey, CR4 4AA

Greenwich Race Equality Unit
147 Powis Street, Woolwich, London, SE18 6JL

Hillingdon Community Relations Council
Darren House, 65 High Street, Uxbridge, Middx, UB8 1JP

Hounslow CAB
51 Grove Road, Hounslow, Middx, TW3 3PR

Hounslow Careers Centre
School Road, Hounslow, Middx, TW3 1QL

Hounslow Teachers' Centre
Smallberry Green, London Road, Isleworth, Middx

Ilford Asian Women's Association
40 Argyle Road, Ilford, Essex, 1GI 3SN

Language Resource Centre
High Cross Education Centre, High Road, Tottenham, London, N17 6QP

Latin American Women's Rights Service
c/o 157 Canbury Park Road, Kingston, Surrey, KT2 6LH

LIMAHT
11 Violet Road, Walthamstow, London, E17 8HZ

Pathway Community Computing Project
Pathway FE Centre, Havelock Road, Southall, Middx, UB2 4NZ

Resources
465 Twickenham Road, Isleworth, Middx, TW7 7DZ

RUSA
Fellowship House, Green Lane, Ilford, Essex

Sangat Community Centre
28a Sancroft Road, Harrow, Middx

Southall Community Law Centre
2 Dilloways Lane, The Green, Southall, Middx, UB2 4ID

Voluntary Action Lewisham
120 Rushey Green, Catford, London, SE6 4HQ

Women in Greenwich
14 Ebdon Way, Fernier Estate, Kidbroke, London, SE3

## MIDLANDS

Asian Women Adhikar Association
15 Bright Street, Whitmore Reans, Wolverhampton, West Midlands, WV1 4AT

Birmingham Tribunal Unit
4th Floor, Cornwell House, 31 Lionel Street, Birmingham, West Midlands, B3 1AP

Birmingham Women's Workshop
Unit 9, Whitworth Industrial Park, Tilton Road, Small Heath, Birmingham, West Midlands, B9 4PE

Coventry Law Centre
The Bridge, 2nd Floor, Broadgate, Coventry, West Midlands, CV1 1NG

Department of Human Sciences
University of Technology, Loughborough, Leicestershire, LE11 3TU

Iranian Community Association (West Midlands)
Old Rectory Building, 3 Tower Street, Off Summer Lane, Newtown, Birmingham, West Midlands, B19 3RL

Leicester CVS
32 De Montfort Street, Leicester, Leicestershire, LE1 7GD

M & Y Asian Association
3 Lea Road, Pennfields, Wolverhampton, West Midlands

Manna Publications
16 Mandora Road, Leicester, Leicestershire, LE2 1AG

North Staffordshire Polytechnic
Department of Computing, Blackheath Lane, Stafford, Staffordshire, ST18 0AD

Nottinghamshire County Council
County Hall, West Bridgford, Nottingham, Nottinghamshire, NG2

Sakthitype
99 Sutton Road, Erdington, Birmingham, West Midlands, B23 5XA

Shelter - Notts Homeless Action
5 Queens Chambers, King Street, Nottingham, Nottinghamshire, NG1 2BH

Teachers' Centre
Pitmaston House, Worcester, Worcs

West End Community Project
c/o Fosse Neighbourhood Centre, Mantle Road, Leicester, Leicestershire, LE3 5HG

West Midlands Arts
82 Granville Street, Birmingham, West Midlands, B1 2LH

## NORTH EAST ENGLAND

CCVS Jobline Agency
Southlands Centre , Endeston Road, Priestfields, Middlesborough, Cleveland, TS3 0HB

Gateshead Libraries and Arts Service
Gateshead Central Library, Prince Consort Road, Gateshead, Tyne & Wear, NE8 44LN

## NORTH WEST ENGLAND

Bangladeshi Family Welfare & Advice Centre
64 Birch Lane, Longsight, Manchester, M13

Blackburn ITEC
Philips Road, Glenfield Park, Blackburn, Lancashire, BB1 5PF

Chinese Information Centre Co-operative
1st Floor, 16 Nicholas Street, Manchester, M1 4EJ

Community Advisory Service
76 Moss Park Road, Stretford, Manchester, M32 9HQ

Cultureword
Cheetwood House, 21 Newton Street, Manchester, M1 1FZ

Liverpool School for Tropical Medicine
Department of International Community Health, Pembroke Place, Liverpool, L3 5QA

Oldham Resource and Information Centre
7-8 Commercial Road, Oldham, Lancashire, OL1 1DP

Relief Society of Tigray
16 Fulford Street, Old Trafford, Manchester, M16

## SOUTH EAST ENGLAND

A L S Ltd
Vector House, Brownfields, Welwyn Garden City, Hertfordshire, AL7 1AN

Multi-cultural Education Resource, Bulmershe College of Higher Education, Woodlands Avenue, Earley, Reading, Berkshire, RG6 1HY

BCRE
3 Walnut Tree Road, Erith, Kent, DA8 1RA

Ian MacDonald & Associates Ltd
12 Church Road, Hove, East Sussex, BN3 2FL

International Computer Supplies
57 West Street, Oxford, Oxfordshire, OX2 OBH

Intext Systems (UK) Ltd
Media House, 6 Knolls Way, Clifton, Bedfordshire, SG17 5QZ

Laserquill
Thameslink House, 38 Thames Street, Windsor, Berkshire, SL4 1PR

Locomotive Software
Allen Court, Dorking, Surrey, RH4 1YL

Tedimen Software
P O Box 23, Southampton, Hampshire, SO9 7BD

The Volunteer Centre UK
29 Lower King's Road, Berkhamsted, Hertfordshire, HP4 2AB

Woking Association of Voluntary Service
1 York Road, Woking, Surrey, GU22 7XH

## SOUTH WEST ENGLAND

Avon Community Interpreting Service
1 City Road, St Paul's, Bristol, Avon, BS2 8TN

Bristol CVS
The Southville Centre, Beauley Road, Southville, Bristol, Avon, BS3 1QG

Bristol Polytechnic
Coldharbour Lane, Bristol, Avon, BS16 1QY

Linotype Ltd
Chelham House, Bath Road, Cheltenham, Gloucestershire, GL53 7LR

Thamesdown & District CRE
Faringdon House, 1 Faringdon Street, Swindon, Wiltshire

## WALES

South Riverside Community Development Centre
32 Gloucester Street, Riverside, Cardiff, Mid Glamorgan

## YORKSHIRE

Bradford Metropolitan CVS
19/25 Sunbridge Road, Bradford, West Yorkshire, BD1 2AY

Hooner Kelah Training Project
Roseville Centre, Gledhow Road, Leeds, West Yorkshire, LS8 5ES

Hull & District CRE
2nd floor, 79 Ferensway, Hull, Humberside, HU2 8LD

Leeds Interpreting & Translations Service
c/o Leeds CRC, Centenary House, North Street, Leeds, West Yorkshire, LS2 8JS

Micropraxis Ltd
Enterprise Workshops, Nursery Street, Sheffield, West Yorkshire, S3 8GG

Save the Children Fund
2nd Floor, National Deposit House, 1 Eastgate, Leeds, West Yorkshire, LS2 7LY

Sesame Computer Projects
8 Avenue Road, Harrogate, North Yorkshire, HG2 7PG

Department of Language & Linguistic Science
University of York, York, Yorkshire YO1 5DD

**Appendix 3**

# Multi-lingual word processing

*by Paul Ticher*

*(reproduced from Computanews, issue no 30, June/July 1987)*

Earlier this year saw the launch of the *SESAME Bulletin* - an exciting new development for all those interested in using computers in more languages than just English. SESAME stands for South East, South Asian and Middle Eastern languages. The Bulletin aims to be a practical source of help for anyone wanting to use 'non-Roman' and 'extended Roman' scripts on computer, and will have contributions from all over the world.

In the first issue, the editors acknowledge that the terminology they're using at the moment is unsatisfactory, and ask for alternative suggestions. It's a striking indication of how much English dominates computing that every other language and script in the world can be lumped together as 'not English', but unfortunately it represents the real situation. Whether you want to use a computer for Greek, or Arabic, or Urdu you face the same problem - lack of interest from the industry.

John Clews, the originator of the SESAME project, points out that the greatest number of developments in this field have been undertaken by computer users, often working in isolation and unaware of related developments elsewhere. This is borne out by articles on the Leicester Buddhist Text Project and the Asian Scripts Project at Bradford City Council. Both these have resulted in the development of software, since nothing suitable existed commercially.

Other articles are more theoretical or technical - on new international standards for text communication, text composition in Devanagari, and high quality dot matrix printing for non-Latin scripts. There are reports of past conferences and notices of forthcoming ones, as well as a news section and advertisements, and a review of the HKT 100H Chinese language terminal.

I found some of the technical articles a bit heavy going. Since the Bulletin covers such a wide field, it's inevitable that some bits will be more relevant than others to any particular reader. Nevertheless, the fact that such a Bulletin exists at all is good news, and we look forward to future issues. Subscriptions cost from £12 a year, and details are available from *SESAME Bulletin*, 8 Avenue Road, Harrogate, North Yorkshire HG2 7PG (tel: 0423 888432).

**What is available?**

So, if you do produce material in a range of languages, what are your options? It all depends, of course, on which languages.

**European languages** - those which use variants of the Roman script - are increasingly available on standard computers and printers. English language IBM compatibles, for example, have a set of over 200 characters built in, including almost everything you need

for writing in Portuguese, Spanish, French, German and the Scandinavian languages. Many programs - and not only word processors - now allow you to use these extra characters, although you may have trouble printing them out. The Amstrad PCW (word processor) also has an extensive range of accented letters and punctuation covering the same requirements. A few programs, mainly for IBM-type machines, provide complete facilities for other European languages, including those from Eastern Europe.

**Greek and Cyrillic** scripts go from left to right the same as Roman script, and there are about the same number of letters in their alphabets. But even though changing the character set is not a major problem, relatively few programs can handle these scripts. (Cyrillic is used for Russian and some other East European languages.)

**Arabic and Hebrew** go from right to left, and have the added complication of the same letter taking different forms according to circumstances. The total number of characters required is still manageable. Commercial demand is big enough for there to be several word processing systems on the market for these languages, including some which allow you to mix, say, Roman and Arabic scripts.

**Urdu** uses a version of Arabic with extra characters, and is usually written in a sloping script, which most Arabic computer systems can't reproduce. It is for this reason that Bradford City Council decided to develop a more satisfactory word processor which is, according to SESAME, 'a great leap forward'. The Council are now to decide whether to make the system commercially available.

**Farsi** and several other languages based on the Arabic script also have additional characters, but can be printed in the non-sloping style. Some Arabic systems have the necessary additional characters.

**North Indian** scripts, such as Devanagari - the most widely used - Punjabi, Gujarati and Bengali have characters which are each built up from several elements. Since no keyboard could contain the several hundred possible characters, a system of multiple keystrokes for each character must be used. As a result, these scripts cannot easily be combined with others, and the programs are usually written independently of existing word processors. The technical problems in developing an Indian national standard for Devanagari systems are discussed in the *SESAME Bulletin*.

Other languages and scripts appear to be less well served. I have not come across anything for the South Indian scripts (Kannada, Malayalam, Tamil and Telugu), nor for Burmese, Khmer, Thai and Lao. This article does not cover the East Asian scripts (Chinese, Japanese and Korean), but commercial systems do exist for these.

**Points to watch**

Getting the script onto the screen and stored on the disc is one thing; getting it printed out is another. You are unlikely to find a printer which has all the necessary characters for more than a few Roman scripts, although some might have Greek characters. (Ours has lower case Greek letters but not upper case.) So in most circumstances the software has to be able to control the printer directly, usually by printing out in 'graphics mode': the output is sent to the printer dot by dot rather than letter by letter. For this you need a dot matrix, inkjet or laser printer, and it must be one which the software knows about; some programs only work with one specific type of printer.

Some of the programs appear completely in the 'other' language, but many start off in English, and may even have all their instructions in English, only allowing you to put other

scripts into the actual text. This is fine if you are bi-lingual, but not very satisfactory otherwise.

You also need to check that the program has been developed by someone who really understands the languages and all the characters that are required. Adaptations of systems designed for more commercially popular languages may claim to support a language but may not in fact provide all the rarely-used characters.

Not all word processors are the same. English language ones are in a highly competitive market, so the latest ones are extremely slick and well thought out. Those which can handle other scripts are often developed on a shoe-string and -- equally importantly -- bought by organisations with inadequate budgets, who therefore want them to be as cheap as possible. Unfortunately, this can mean that the actual word processing features aren't at 'state of the art' level.

Nor are all computers the same. Although the Amstrad PC1512 is 'IBM compatible', its screen is designed to the lowest IBM standard. Most IBM users find this unacceptable and replace the screen with a better one, but with the Amstrad you can't do this. So if your script needs a high quality screen - which most of them do - you can't use this Amstrad. Equally, you may find that the best program for the script you want only runs on a computer which won't run any of the other programs you need.

You can check most of these questions by seeing the program in action and looking at samples of printout, but make sure that the computer and printer are as nearly the same as yours as possible.

Printout which looks fine on a high quality printer may look awful on a cheaper one - or it may take an unacceptably long time to print.

**Products**

Since the market for word processing in anything except English is so small, there are no good, comprehensive sources of information - unlike the regular software guides produced in other areas.

## Acknowledgements

The conference was organised by the Community Information Project and a steering group with staff from other organisations.

Many thanks to all who helped to make the event a success, particularly:

Mary Berridge and Roxanne Seamons from Greater London Citizens Advice Bureaux Service; Jane Connor, Martin Jones and Jan Tallis from London Advice Services Alliance Computer Development Unit; Desna Roberts from London Voluntary Service Council; and Gill Taylor, who undertook registration and helped out in many other ways on the day and in the last hectic week beforehand.

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END

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Office of Education
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ERIC

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